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**BUILDING MAINTENANCE MANAGEMENT SUPPORT SYSTEM AND PROGRAM
STORAGE MEDIUM FOR BUILDING MAINTENANCE MANAGEMENT**

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BUILDING MAINTENANCE MANAGEMENT SUPPORT SYSTEM AND PROGRAM
STORAGE MEDIUM FOR BUILDING MAINTENANCE MANAGEMENT

[Kenchikubutsu hoshu kanri shien shisutemu to kenchikubutsu hoshu kanri no tame no
puroguramu kiroku baitai]

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[There are no amendments to this patent.]

Claims

1. In a system that supports building maintenance management on a computer,
a building maintenance management support system characterized in having a means that registers management information that includes information relating to the repair cycle and repair expenses for each part constituting equipment or facilities to be maintained and inspected in a building,
a means that creates a long-term repair plan in which repair expenses for each year and total expenses for a specific number of years are compiled for each piece of equipment or facility and/or each part, based on the aforementioned registered management information, when a prescribed instruction is given,

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and a means that outputs the aforementioned long-term repair plan created.

2. In a recording medium that records programs to construct a system to support building maintenance management on a computer,

a program recording medium for building maintenance management characterized in that programs are recorded which have a means that registers management information that includes information relating to the repair cycle and repair expenses for each part that constitutes equipment or facilities to be maintained and inspected in a building,

a means that creates a long-term repair plan in which repair expenses for each year and total expenses for a specific number of years are compiled for each piece of equipment or facility and/or each part, based on the aforementioned registered management information, when a prescribed instruction is given,

and a means that outputs the aforementioned long-term repair plan created.

3. In a system that supports building maintenance management on a computer,

a building maintenance management support system characterized in having a means that registers management information that includes information relating to the inspection cycle for each inspected section and the load per inspection,

a means that calculates the annual total load for each inspected section and/or each piece of equipment or facility when a prescribed instruction is given,

and a means that outputs the aforementioned annual total load calculated.

4. In a recording medium that records programs for constructing a system that supports building maintenance management on a computer,

a program recording medium for building maintenance management characterized in that programs are recorded that have a means that registers management information that includes information relating to the inspection cycle for each inspected section in the building and the load per inspection,

a means that calculates the annual total load for each inspected section and/or each piece of equipment or facility when a prescribed instruction is given,

and a means that outputs the aforementioned annual total load calculated.

Detailed explanation of the invention

[0001]

Technical field of the invention

The present invention relates to a building maintenance management support system for supporting building maintenance management on a computer and to a recording medium on which are recorded programs for building maintenance management.

[0002]

Prior art

In recent years, the importance of managing the maintenance of buildings, particularly large-scale buildings, continues to increase. Particularly in buildings in which equipment such as air-conditioning equipment or electrical equipment has been provided, the necessity of standardized maintenance and inspection for this equipment or other facilities is being recognized. However, standardized maintenance and inspection are difficult to realize for a variety of reasons, e.g., the items for maintenance and inspection differ for each building and for each piece of equipment or facility. In many cases, maintenance and inspection do not go beyond being implemented under human supervision using the experience of a supervisor or the like.

[0003]

However, with building maintenance management performed under such human supervision, it is easy for inspections to be overlooked due to setting errors of the initial maintenance and inspection items during maintenance management planning. It is also extremely difficult to acquire information to set up a detailed building maintenance management plan, such as estimate of repair costs required in the future, recognition of the repair period, as well as computing the number of staff required permanently assigned as maintenance and inspection workers. For this reason, creating a long-term repair plan or realizing planned building maintenance management is difficult in actuality.

[0004]

Problems to be solved by the invention

The present invention was realized in consideration of such a situation. Its primary objective is to provide a building maintenance management support system that can realize planned maintenance management depending on the building and a program recording medium for building maintenance management.

[0005]

A more concrete objective of the present invention is to provide a building maintenance repair support system that can automatically create a long-term repair plan for each piece of equipment or facility of a building, or each part and display or print it, and a program recording medium for building maintenance management, when building maintenance management is supported with a computer.

[0006]

In addition, the objective of the present invention is to provide a building maintenance management support system that can calculate an accurate annual inspection load in units of building inspected sections, equipment or facilities, or the like, and find the number of staff required for maintenance and inspection from the annual inspection load, and a program recording medium for building maintenance management, when building maintenance management is supported with a computer.

[0007]

Means to solve the problems

In order to accomplish the aforementioned objectives, the building maintenance management support system of the present invention, as described in Claim 1, is provided with a means that registers management information that includes information relating to the repair cycle or repair expenses for each part that constitutes equipment or facilities to be maintained and inspected in a building, a means that creates a long-term repair plan in which expenses required for maintenance for each year and the total expenses for a specific number of years for each piece of equipment or facility and/or each part are compiled based on the aforementioned registered information when a prescribed instruction is given, and a means that outputs the aforementioned long-term repair plan created, in a system that supports building maintenance management on a computer.

[0008]

The program recording medium for building maintenance management of the present invention, as described in Claim 2, also records programs that have a means that registers management information that includes information relating to the repair cycle and repair expenses for each part that constitutes the equipment or facility to be maintained and inspected in a building, a means that creates a long-term repair plan in which expenses required for maintenance for each year and the total expenses for a specific number of years for each piece of equipment or facility and/or each part are compiled based on the aforementioned registered information when a prescribed instruction is given, and a means that outputs the aforementioned long-term repair plan created, in a recording medium that records programs for constructing a system that supports building maintenance management on a computer.

[0009]

In this way, the present invention can automatically create and display or print a long-term repair plan in which the expenses required for repair for each year and the total expenses for a

specific number of years for each piece of equipment or facility and/or each part in a building are compiled. It can easily estimate repair expenses required in the future and recognize repair periods, and it can realize detailed planned maintenance management for a building.

[0010]

In addition, the building maintenance management system of the present invention, as described in Claim 3, has a means that registers management information that includes information relating to the inspection cycle for each inspected section in a building and to the load per inspection, a means that calculates the total annual load for each inspected section and/or each piece of equipment or facility based on the aforementioned registered management information when a specific instruction is given, and a means that outputs the aforementioned total annual load calculated, in a system that supports building maintenance management on a computer.

[0011]

The program recording medium for building maintenance management of the present invention, as described in Claim 4, is also constituted to record programs that have a means that registers management information that includes information relating to the inspection cycle for each inspected section in a building and to the load per inspection, a means that calculates the total annual load for each inspected section and/or each piece of equipment or facility based on the aforementioned registered management information when a specific instruction is given, and a means that outputs the aforementioned total annual load calculated, in a recording medium that records programs for constructing a system that supports building maintenance management on a computer.

[0012]

In this way, the present invention can realize planned inspection management depending on the building, e.g., calculate and display or print the total annual load for each inspected section and/or each piece of equipment or facility, and estimate the number of staff required when maintenance and inspection workers are permanently assigned, for example, from the total annual load.

[0013]

Embodiment of the invention

Below, an embodiment when the present invention is realized will be explained referring to figures.

[0014]

The building maintenance management support system (hereafter simply called the system) pertaining to the present invention is realized by storing a database and control program, for example, on a recording medium, such as a CD-ROM or floppy disk, and installing the software from the recording medium on a multiuse computer.

[0015]

As for the computer peripheral equipment, a large-capacity external storage device such as an MO [magneto-optical (type)], input devices such as a keyboard and mouse, a scanner to input images or another image data transfer system, and an output device such as a display or printer are required.

[0016]

As shown in Figure 1, the primary functions of the system are functions such as (1) "Building management," (2) "Management ledger," (3) "Maintenance and inspection criteria," (4) "Maintenance and inspection table creation" and (5) "Diagram management."

[0017]

Function (1) "Building management" is a function for registering and referencing a summary of the building being managed and to select the building that should actually be processed with the system. With this system, managing of multiple buildings, for example, 10, is possible.

[0018]

Function (2) "Management ledger" is a function for managing equipment specifications (2a), e.g., the names of all equipment or facilities (hereafter generically termed "equipment") to be maintained and inspected, installation locations, or capability, repair history (2b), e.g., the date that service, repairs, replacement or the like was performed, details, or expenses, and part durability (2c), e.g., number of durable years for each equipment part or service interval. Function 2 "Management ledger" also includes the function (2d) "Long-term repair plan creation" to create a long-term repair plan for each piece of equipment and each part from part durability (2c).

[0019]

Function (3) "Maintenance and inspection criteria" is a function for managing maintenance and inspection criteria corresponding to the individual pieces of equipment registered in the management ledger and enables creation of one's own maintenance and inspection criteria at the

user side by modifying the inspection cycle or inspection remarks. Function (3) "Maintenance and inspection criteria" also includes a function (3a) "Total annual inspection load" that automatically totals the load pertaining to maintenance and inspection in 1 year based on the maintenance and inspection criteria, which enables estimate of the number of maintenance staff required, annual worker load, annual work amount and the like from the totaled annual inspection load.

[0020]

Function (4) "Maintenance and inspection table creation" is a function to create a maintenance and inspection checklist from the maintenance and inspection criteria for the relevant equipment when individual pieces of equipment undergo maintenance and inspection. The maintenance and inspection checklist created can be output as printed text (maintenance and inspection instructions). On the maintenance and inspection table screen, deficient items can be input when they are discovered by maintenance and inspection performed by a maintenance worker based on the maintenance and inspection list, and detailed handling information can be input when the deficient items are serviced (repaired). The detailed repair information is copied in repair history (2b) of the management ledger.

[0021]

Function (5) "Diagram management" is a function the links (correlates) the management ledger and diagrams, photographs or other image data, and switches the display between the management ledger and image data following the link definition.

[0022]

In addition, the system has functions such as a trade connection ledger, consumables management, legal notification expense, and the like, but explanations thereof are omitted here.

[0023]

Next, the operation of the system will be explained using several representative functions as examples.

[0024]

A processing selection menu (20) is shown in Figure 2. A group of processing items, such as "Diagram management," "Building management," "Management ledger," "Maintenance and inspection criteria," and "Maintenance and inspection table" is displayed on processing selection menu (20), and by selecting one of the processing items from the menu (20), the function module corresponding that processing item is activated.

[0025]

Initial operations after software installation include registration of summaries of the buildings being managed, registration of the management ledger (equipment specifications, part durability), registration of maintenance and inspection criteria, and registration of objects to link the management ledger and image data, such as diagrams or photographs. These registration operations are accomplished by selecting the target processing item from processing selection menu (20) in sequence and activating the registration function. The registered information is stored as a database in an external storage device connected to the computer, such as an MO [type], for example.

[0026]

After the registration above is completed, and a target building is selected using the "Building management" function, for example, [the system] returns to processing selection menu (20) and the management ledger initial screen is displayed when the "Management ledger" processing item is selected.

[0027]

The maintenance ledger initial screen is shown in Figure 3. Equipment list selection buttons (32) and (33), and various selection buttons (34)-(43) for "Repair history," "Management diagrams," "Search," "List," "Print," "New," "Delete," "Move" "To inspection criteria," and "To menu" are displayed on this management ledger screen. As for "Repair history" button (34), display is switched between "part durability," "equipment specifications" and "repair history" by selecting operation of button (41).

[0028]

When top list selection button (32) is operated, equipment requirements such as air conditioning, health, firefighting, transport or others are listed. When bottom list selection button (33) is operated, equipment requirements such as refrigeration installation, boiler installation, heat exchanger installation, forced exhaust installation, storage installation or other installations are listed. When the desired equipment list selection requirements, for example, air conditioning and cooling equipment installation, are selected from the equipment list selection requirements, and "List" button (37) is selected, as shown in Figure 4, a management ledger list for the selected building is displayed. When the ID item on the desired ledger line is selected from the management ledger list, the management ledger content for that equipment is retrieved from the database, and a management ledger specification screen in which equipment specification

information (31), such as equipment name, installation location, capability or the like, as shown in Figure 5, is entered is displayed.

[0029]

The "Repair history" button (34) is operated at the management ledger specification screen to display the management ledger – repair history screen. The "part durability" button that appears at the position of (34) by selecting "Move" button (41) to the management ledger – part durability display screen (61) as a multi-window screen on the repair ledger screen as shown in Figure 6. The part durability information includes the part name, number of durable years (number of durable years by law), anticipated durable years (number of durable years anticipated by the user), modification interval (in years), modification expenses, whether examination is [required] by law (1 = yes, 0 = no), and the like for each part constituting the equipment. A "Long-term repair plan display" button (62) is furnished on the part durability screen (61). Function (2d) "Long-term repair plan creation" in management ledger (2) is activated by selecting button (62), a long-term repair plan for each piece of equipment and each part is created from the number of durable years, anticipated durable years, service interval, repair expense and the like for each part of the equipment, and the results are displayed onscreen.

[0030]

An example of display of a long-term repair plan is shown in Figure 7. The expenses associated with repairs for each year are displayed for each part, and although shown in the figure, the durable years for each part and the total repair expenses for the anticipated number of years are displayed. In addition, expense (71) associated with repair for each year for each piece of equipment and, although not shown in the figure, the total repair expense for the number of durable years for each piece of equipment are displayed. Note that the entire long-term repair plan can be referenced by scrolling using the long-term repair plan.

[0031]

In this way, with this building maintenance management support system, a long-term repair plan for each piece of equipment or each part can automatically be created and displayed, and of course, printed, by the user registering the number of durable years, the anticipated number of years, the service interval, repair expense and the like for each part of the equipment. It will be possible to easily ascertain the number of years in which service or repair will occur in the future and the expense from the long-term repair plan. Also, by registering data for each part, accurate, concrete data registration based on actual data of the past is possible, and a highly reliable long-term repair plan is obtained.

[0032]

The "To inspection criteria" button (42) on the ledger management screen in Figure 5 is operated to display the maintenance and repair criteria screen (81) associated with the relevant equipment, as shown in Figure 8. The maintenance and repair criteria information includes the inspected section indicating an outline of the equipment location, the inspection category indicating an outline of the content of the maintenance and inspection performed, the inspection content indicating the content of the maintenance and inspection performed, the inspection cycle, the inspection load per maintenance and inspection incident, and the like. Of these, the user can freely select the inspection cycle and the inspection load. Inspection cycles include none, as needed, daily, weekly, twice weekly, monthly, ..., annually, twice annually, and the like, and they can be set by selecting from predetermined cycle choices. As for inspection load, since the total annual load changes according to the inspection cycle, total annual load (84) for each inspected section and automatic calculation of total annual load (83) for each piece of equipment can be realized by setting the converted value according to the annual inspection load cycle for each inspection cycle category.

[0033]

Explaining this point in more detail, a "Load conversion value setting" button (82) is furnished on maintenance and inspection criteria screen (81). When button (82) is selected, a setting screen for the converted value by inspection load cycle as shown in Figure 9 is displayed. The user, for example, calls up the setting screen for the converted value by inspection load cycle after system introduction, and sets the converted value by inspection load cycle for each inspection cycle category, such as none, as needed, daily, weekly, twice weekly, monthly, ..., annually, twice annually, or the like, which are displayed there. Total annual load (84) for each inspected section and total annual load (83) for each piece of equipment can be found from the inspection cycle and inspection load set by the user using the converted value by inspection load cycle.

[0034]

For example, assuming that the value of inspection load for 1 hour by one maintenance and inspection worker is "1," letting the inspection cycle for a certain inspected section be "Monthly," the inspection load "1," and the total annual load for this inspected section "12," the total annual load for this inspected section becomes "12." Thus, the fact that a labor time of about 12 hours by one maintenance and inspection worker is expended for annual maintenance and inspection of said inspected section is determined.

[0035]

An "Annual inspection load" button (85) is also furnished on maintenance and inspection criteria screen (81). When it is selected, a total annual inspection load screen as shown in Figure 10 is displayed. The annual inspection load (101) for all the individual pieces of equipment in a building and the annual inspection load (102) for the entire building are displayed on the total annual inspection load screen. The staff required for maintenance and inspection of a building in 1 year, for example, can be calculated at the user side. For example, assuming that the annual inspection load points for the entire building are "8000," and assuming that the annual working hours for one maintenance and inspection worker are 2000 hours, it can be seen that 4 maintenance and inspection workers are required.

[0036]

In this way, with this building maintenance management support system, a more accurate annual inspection load can be calculated in various units, such as the entire building, equipment in the building, and inspected section, and the number of maintenance and inspection workers required can be roughly estimated at the user side from the annual inspection load.

[0037]

Next, diagram management operation with this system will be explained.

[0038]

With this system, the management ledger for each piece of equipment and image data, such as diagrams and photographs, are linked, and display switching between both is realized. That is, switching from the management ledger screen to an image data display screen, such as a diagram illustrating the installation location of the equipment being managed or an external photograph thereof, accomplished using simple button selection. Conversely, switching the display from the image data to the management ledger is also possible.

[0039]

Image data registration and link setting with the management ledger is performed as follows. First, the processing item "Diagram management" is selected from processing selection menu (20) shown in Figure 2. Then a diagram processing screen as shown in Figure 11 appears. Various processing buttons (111), (112) and (113) for "Create new," "Reference/edit," and "Delete" are furnished on the diagram management screen. When "Create new" button (111) is selected to register image data, a register new diagram screen as shown in Figure 12 appears. Image data are registered by inputting the diagram type (independent or stacked), category (for

example, plan view, photograph, etc.), installation (building, health, air conditioning, electrical, etc.), diagram name, file name and the like at the register new diagram screen, and the registered content is shown in the diagram management screen shown in Figure 11.

[0040]

Next, to link the registered image data and the management ledger for the target building and equipment, after the target building is selected with function (1) "Building management," the management ledger for the target equipment is specified using function (2) "Management ledger," and the management ledger is displayed. Here, as shown in Figure 13, when "Management screen" button (35) on the management ledger screen is operated, the management screen link menu (131) is displayed. Processing items such as "Diagram reference," "Diagram link definition," "Change diagram link," "Delete diagram link," etc., are displayed on link menu (131). From these, setting of a link between the aforementioned registered image data and the management ledger being displayed is accomplished by selecting the "Diagram link definition" processing item.

[0041]

In the case of diagrams extending over a broad area, such as a floor plan view, it is difficult to identify the position of the equipment linked in the management ledger at a glance just by displaying the diagram. So, with this system, with link definition between the image and the management ledger, as shown in Figure 14, symbol (141) (for example, a mark enclosing the equipment in a frame of a different color from the graphics lines) is assigned to the position of the equipment in the diagram that is being managed in the management ledger to emphasize the position of each piece of equipment, and the link between the equipment in the management ledger and the diagram is realized through symbol (141). Process of assigning symbol (141) is carried out by setting the position and the color, thickness and line type of boarder line by using a mouse.

[0042]

In this way, image data linked with a management ledger is retrieved from the database and displayed by operating the "Management diagram" button (35) on the management ledger screen shown in Figure 13. Therefore, while referencing the management ledger for a certain piece of equipment, the installation location of the equipment being managed by the management ledger can be identified immediately when one wants to identify it. Also, to reference a management ledger from a diagram or photograph, the display is automatically switched to the management ledger screen (142) linked to symbol (141) by specifying symbol (141) using a mouse.

[0043]

Note that it is also possible to link multiple image data [items] to one management ledger. In this case, individual image data [items] are set in order during link designation, and the image data are displayed sequentially following that order. For example, when links for a detailed diagram and a photograph for symbol section (141) in the plan view shown in Figure 14 are defined and symbol (141) is specified in the plan view, switching of the display to the detailed diagram and photograph (143) with that symbol section from the plan view is realized. Switching to subordinate image data can be accomplished by specifying target symbol (141) after selecting "Search for next" button (144) furnished in the image data screen in Figure 14, for example.

[0044]

Image data displayed in this way can be printed with a printer and can be used as part of the instructions for building maintenance management along with the maintenance and inspection checklist created from the maintenance and inspection criteria.

[0045]

Here, with the aforementioned embodiment, a building maintenance management support system was explained which is realized by accommodating databases, control programs, and the like on a recording medium, such as a CD-ROM or floppy disk, as one [set of] software and installing the software on a multiuse computer from the recording medium. It goes without saying, though, that it can also be realized as a specialized building maintenance management support system in which databases, control programs and the like are accommodated as one [set of] software that are fixed on a storage device.

[0046]

Effect of the invention

With the present invention as explained above, a long-term repair plan, in which expenses associated with repair for each year and the total expenses for a specific number of years for each piece of equipment or facility and/or each part in a building are compiled, can be created and displayed or printed automatically. So, estimate of associated repair expenses in the future and repair periods can easily be identified, and planned maintenance for the building can be managed.

[0047]

Also, with the present invention, the total annual load for each inspected section and/or each piece of equipment or facility can be calculated and displayed or printed, and more planned maintenance management of a building can be realized by trial calculating the number of staff

required when maintenance and inspection workers are permanently assigned, for example, from the total annual load.

Brief description of the figures

Figure 1 is a functional block diagram of a building maintenance management support system that is an embodiment of the present invention.

Figure 2 shows a processing selection menu displayed in the system in Figure 1.

Figure 3 shows the management ledger initial screen.

Figure 4 shows the management ledger list screen.

Figure 5 shows the management ledger – specification screen.

Figure 6 shows the management ledger – part durability screen.

Figure 7 shows a display example of a long-term repair plan.

Figure 8 shows a maintenance and inspection criteria screen.

Figure 9 shows the setting screen for converted value by inspection load cycle.

Figure 10 shows a total annual inspection load screen.

Figure 11 shows a diagram management screen.

Figure 12 shows a new diagram registration screen.

Figure 13 is a figure for explaining the procedure to define a link between a management ledger and a diagram.

Figure 14 shows a display example of a diagram searched from a management ledger.

Explanation of symbols

- 1 Building management
- 2 Management ledger
- 3 Maintenance and inspection criteria
- 4 Maintenance and inspection table creation
- 5 Diagram management
- 2a Equipment specifications
- 2c Part durability
- 2d Long-term repair plan creation
- 3a Total annual inspection load

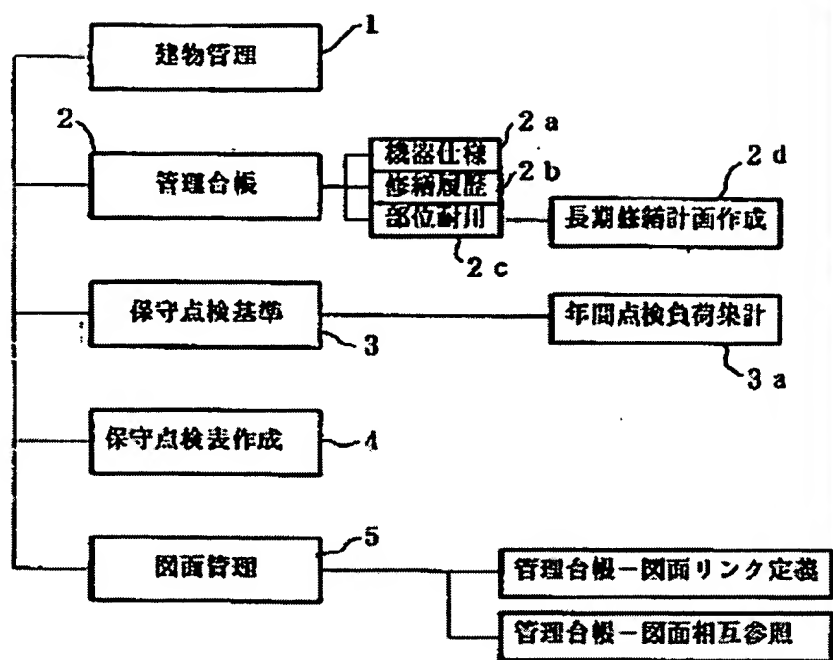


Figure 1

- Key:
- 1 Building management
 - 2 Management ledger
 - 2a Equipment specifications
 - 2b Repair history
 - 2c Part durability
 - 2d Long-term repair plan creation
 - 3 Maintenance and inspection criteria
 - 3a Total annual inspection load
 - 4 Maintenance and inspection table creation
 - 5 Diagram management
 - 5a Management ledger – diagram link definition
 - 5b Management ledger – diagram cross-referencing

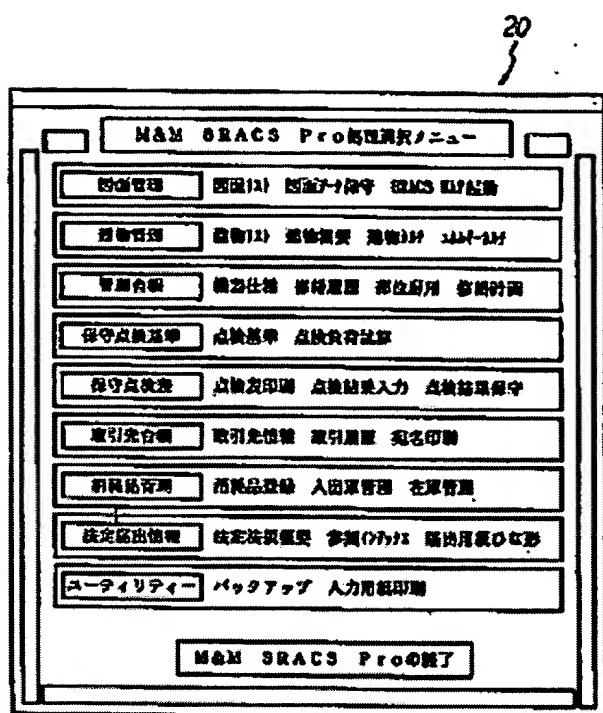


Figure 2

- Key:
- 1 M&M SRACS Pro processing selection menu
 - 2 Diagram management
 - 3 Diagram list Diagram data maintenance SRACS map activation
 - 4 Building management
 - 5 Building list Building summary Building chart Energy chart
 - 6 Management ledger
 - 7 Equipment specifications Repair history Part durability Repair plan
 - 8 Maintenance and inspection criteria
 - 9 Inspection criteria Inspection load estimate
 - 10 Maintenance and inspection table
 - 11 Print inspection table Input inspection result Inspection result maintenance
 - 12 Trade connection ledger
 - 13 Trade connection info Transaction history Print address
 - 14 Consumables management
 - 15 Register consumable Inventory in-out management On-hand management
 - 16 Legal notification information
 - 17 Law and regulation summary Reference index Notification form [illegible]
 - 18 Utilities
 - 19 Backup Print input form
 - 20 M&M SRACS Pro completed

Figure 3 shows a software interface for equipment management. It includes a header section with a title '管理台帳' and search filters for '参照図' and '台帳ID'. The main area contains several rows of input fields for equipment details, such as '設備ID', '分類', '区分', '高', '低', '仕様', '製造番号', '設置場所', '管理名称', '数量', '製造年', '製造月', '製造日', '取得価格(1台)', and '備考'. On the right side, there is a vertical column of buttons for various actions, including '検索', '一覧', '印刷', '編集', '削除', 'MDM', '点検記録', and 'メンテナンス'. Numbered callouts (1-43) point to specific elements in the interface, which are defined in the key below.

Figure 3

- Key:
- 1 Management ledger
 - 2 Reference diagram
 - 3 Number of records selected
 - 4 Ledger ID
 - 5 Building abbreviation
 - 6 Headquarter
 - 7 Equipment list
 - 8 Category
 - 9 Name
 - 10 Equipment No.
 - 11 Management name
 - 12 Number of units
 - 13 Manufacturer
 - 14 Manufacturer No.
 - 15 Remarks
 - 16 Section
 - 17 Specifications
 - 18 Installation location
 - 19 System name
 - 20 Installation year month day
 - 21 Acquisition price (1 unit)
 - 22 Equipment list selection requirements
 - 34 Repair history
 - 35 Management diagram
 - 36 Examine
 - 37 List
 - 38 Print

- 39 New
 40 Delete
 42 To inspection criteria
 43 To menu

管理台帳一覧									
管理台帳									点検表
ID	機種名	分類	区分	名称	仕様	機器番号	設置場所	管理名称	選択
1	W01-11	空調	冷凍機設備	冷房機	冷房機	AC-25	5階北側空調機械室	AC-25-5N	○
2	W01-11	空調	冷凍機設備	冷房機	冷房機	AC-3	5階南側空調機械室	AC-3-5S	○
3	W01-11	空調	冷凍機設備	冷房機	冷房機	AC-5	1階E.L.V.室	AC-5	○
4	W01-11	空調	冷凍機設備	冷房機	冷房機	AC-2F	7階空調機械室(南)	AC-2F-6S	○
5	W01-11	空調	冷凍機設備	冷房機	冷房機	AC-1C	4階北側空調機械室	AC-1C-4N	○
6	W01-11	空調	冷凍機設備	冷房機	冷房機	AC-2S	4階南側空調機械室	AC-2C-4S	○
7	W01-11	空調	冷凍機設備	冷房機	冷房機	AC-2B	3階南側空調機械室	AC-2B-3S	○
8	W01-11	空調	冷凍機設備	冷房機	冷房機	AC-1A	2階北側空調機械室	AC-1A-2N	○
9	W01-11	空調	冷凍機設備	冷房機	冷房機	AC-2C	2階南側空調機械室	AC-2C-2S	○
10	W01-11	空調	冷凍機設備	冷房機	冷房機	AC-2B	1階北側空調機械室	AC-2B-1N	○
11	W01-11	空調	冷凍機設備	冷房機	冷房機	AC-2A	1階南側空調機械室	AC-2A-1S	○
12	W01-11	空調	冷凍機設備	冷房機	冷房機	AC-1B	3階北側空調機械室	AC-1B-3N	○
13	W01-11	空調	冷凍機設備	冷房機	冷房機	AC-4	7階空調機械室(北)	AC-4-7N	○
14	W02-07	空調	冷房設備	冷房機	真空温水器	B-1	1階空調機械室		○
15	W03-03	空調	送排風機設備	軸流送風機	換気扇	BF-9	1階ロビー室	BF-9	○
16	W03-03	空調	送排風機設備	軸流送風機	換気扇	BF-10A-2A	1階管理室	BF-10A	○
<div> <div>検索</div> <div>ソート</div> <div>全選択</div> <div>全解除</div> <div>閉じる</div> </div>									

Figure 4

- Key: 1 Management ledger list
 2 Management ledger
 3 Category
 4 Section
 6 Name
 7 Specifications
 8 Equipment No.
 9 Installation location
 10 Management name
 11 Inspection table selection
 12 Air conditioning
 13 Refrigeration installation
 14 Boiler installation
 15 Forced exhaust installation
 16 Package unit
 17 Boiler
 18 Axial flow blower

- 19 Separate
- 20 Vacuum hot water heater
- 21 Ventilating fan
- 22 5th floor north A/C machine room
- 23 5th floor south A/C machine room
- 24 1st floor elevator hall
- 25 7th floor A/C machine room (south
- 26 4th floor north A/C machine room
- 27 4th floor south A/C machine room
- 28 3rd floor south A/C machine room
- 29 2nd floor north A/C machine room
- 30 2nd floor south A/C machine room
- 31 1st floor north A/C machine room
- 32 1st floor south A/C machine room
- 33 3rd floor north A/C machine room
- 34 7th floor A/C machine room (north
- 35 1st floor A/C machine room
- 36 1st floor locker room
- 37 1st floor administrative office
- 38 Search
- 39 Notes
- 40 Select all
- 41 Delete all
- 42 Close
- 43 Grid

<div>管理台帳</div> <div>参照図面: 0 選択レコード数: 598 台帳ID: 1</div>				<div>建物略称</div> <div>木 部</div>	
<div>機器ID</div> <div>MD1-11</div>				<div>機器ID)選択条件</div> <div>空調</div>	
<div>分類</div> <div>空調</div> <div>区分</div> <div>冷凍機設備</div>				<div>冷凍機設備</div>	
<div>名称</div> <div>マルチユニット</div> <div>仕様</div> <div>バルブ</div>					
<div>機器番号</div> <div>AC-1A</div> <div>設置場所</div> <div>2階北空調機械室</div>				<div>修繕履歴</div>	
<div>管理名称</div> <div>AC-1A</div> <div>室外機型式</div> <div>RCR-25B</div>				<div>参照図面</div>	
<div>冷凍能力</div> <div>45000kcal/h</div> <div>室外機送風機・量</div> <div>8.4kw-2台-230m3/min</div>				<div>検索</div>	
<div>暖房能力</div> <div>50000kcal/h</div> <div>冷暖機種・量</div> <div>R-22</div>				<div>一覧</div>	
<div>室内機型式</div> <div>DP-20HL1</div> <div>室内機送風機・量</div> <div>2.2kw-185m3/min</div>				<div>印刷</div>	
<div>圧縮機能力</div> <div>3P-210v-7.5kw-2台</div> <div>圧縮機種・枚数</div> <div>中性油41t/4枚</div>				<div>新規</div>	
<div>台数</div> <div>1</div> <div>系統名</div> <div></div>				<div>削除</div>	
<div>製造者</div> <div>日立製作所</div> <div>設置年月日</div> <div>88/03/01</div>				<div>戻る</div>	
<div>製造番号</div> <div>DAF45485</div> <div>取得価格(1台)</div> <div>¥2,820,000</div>				<div>点検基準へ</div>	
<div>備考</div> <div>加振番255000</div>				<div>メニューへ</div>	

Figure 5

- Key:
- 1 Management ledger
 - 2 Reference diagram
 - 3 Number of records selected
 - 4 Ledger ID
 - 5 Building abbreviation
 - 6 Headquarters
 - 7 Equipment list
 - 8 Category
 - 9 Name
 - 10 Equipment No.
 - 11 Management name
 - 12 Cooling capability
 - 13 Heating capability
 - 14 [illegible] machinery type
 - 15 Indoor ventilator – quantity
 - 16 Compressor capability
 - 17 Number of units
 - 18 Manufacturer

19	Manufacturer No.
20	Remarks
21	Air conditioning
22	Package unit
23	2 units
24	Hitachi Ltd.
25	Heater
26	Section
27	Specifications
28	Installation location
29	Outdoor machinery type
30	Outdoor ventilator – quantity
31	Coolant type – quantity
32	Air conditioning
33	Refrigeration installation
34	Repair history
35	Management diagram
36	Search
37	List
38	Print
39	New
40	Delete
42	To inspection criteria
43	To menu
44	Crankcase heater capacity
45	Amount of heating
46	Filter type – number
47	System name
48	Installation year month day
49	Acquisition price (1 unit)
50	Refrigeration installation
51	Separate
52	2 nd floor north A/C machine room
53	2 units
54	2 units
55	4 moderate performance varicell [transliteration]
56	Equipment list selection requirements

管理台帳

参照画面: 0 選択レコード: 2307 台帳ID: 1

建物略称: 本郷

機器ID: R01-11

分類: 空調 区分: 冷凍機設備

名称: パッケージ 仕様: パッケージ

機器番号: MC-1A 設置場所: 2階北空調機検査

修理履歴

管理画面

検索

一覧

印刷

新規

削除

点検基準へ

メニューへ

部位名	耐用	期待	補修	(費用)	改修	(費用)	法定検査
本体	15	20	5	¥50,000	10	¥100,000	1
屋外機	15	20	1	¥5,000	5	¥10,000	1
吹出弁	15	20	3	¥2,000	10	¥5,000	0
送風機電動機	15	20	2	¥4,000	4	¥8,000	0
送風機	15	20	3	¥0	0	¥0	1
蒸発器	15	20	8	¥3,000	15	¥4,000	1

長期修繕計画表示

台数: 1 系統名:

製造者: 日立製作所 設置年月日: 88/03/01

製造番号: 04745405 取得価格(1台): ¥2,430,000

備考: 加圧器255000

Figure 6

- Key:
- 1 Management ledger
 - 2 Reference diagram
 - 3 Number of records selected
 - 4 Ledger ID
 - 5 Building abbreviation
 - 6 Headquarters
 - 7 Equipment list
 - 8 Category
 - 9 Name
 - 10 Equipment No.
 - 11 Air conditioning
 - 12 Package unit
 - 13 Section
 - 14 Specifications
 - 15 Installation location
 - 16 Refrigeration installation
 - 17 Separate

18 2nd floor north A/C machine room
19 Part name
20 [illegible]
21 Anticipated
22 Service
23 (Expense)
24 Modification
25 (Expense)
26 Legal examination
27 Main unit
28 Outdoor equipment
29 Exhaust grill
30 Blower motor
31 Blower
32 Evaporator
33 Display long-term repair plan
34 Number of units
35 Manufacturer
36 Manufacturer No.
37 Remarks
38 Hitachi Ltd.
39 Heater
40 System name
41 Installation year month day
42 Acquisition price (1 unit)
43 Equipment list selection requirements
44 Air conditioning
45 Refrigeration installation
46 Repair history
47 Management diagram
48 Search
49 List
50 Print
51 New
52 Delete
53 To inspection criteria
54 To menu

空調	冷凍機設備	パッケージユニット	セパレート	AC-1A	2階北空調機械室							
部位名	決定	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
本体	○					補					補改	
		¥0	¥0	¥0	¥0	¥50,000	¥0	¥0	¥0	¥0	¥150,000	
屋外機	○	補	補	補	補	補改	補	補	補	補	補改	補
		¥5,000	¥5,000	¥5,000	¥5,000	¥15,000	¥5,000	¥5,000	¥5,000	¥5,000	¥15,000	¥5,000
吹出し				補			補			補	改	
		¥0	¥0	¥2,000	¥0	¥0	¥2,000	¥0	¥0	¥2,000	¥5,000	
送風機モーター			補		補改		補		補改		補	
		¥0	¥4,000	¥0	¥12,000	¥0	¥4,000	¥0	¥12,000	¥0	¥4,000	
送風機	○			補			補			補		
		¥0	¥0	¥0	¥0	¥0	¥0	¥0	¥0	¥0	¥0	
蒸発器	○			補			補			補		
		¥0	¥0	¥3,000	¥0	¥0	¥3,000	¥0	¥0	¥2,000	¥0	
凝縮器	○			補			補			補	改	
		¥0	¥0	¥0	¥0	¥0	¥0	¥0	¥0	¥0	¥0	
圧縮器	○							補			改	
		¥0	¥0	¥0	¥0	¥0	¥0	¥10,000	¥0	¥0	¥15,000	
加湿器	○	補	補	補	補	補改	補	補	補	補	補改	補
		¥0	¥0	¥0	¥0	¥0	¥0	¥0	¥0	¥0	¥0	
		¥5,000	¥9,000	¥13,500	¥17,000	¥32,500	¥17,500	¥15,000	¥17,000	¥13,500	¥192,500	¥5,000
71												戻る

Figure 7

- Key:
- 1 Air conditioning
 - 2 Refrigeration installation
 - 3 Package unit
 - 4 Separate
 - 5 2nd floor north A/C machine room
 - 6 Part name
 - 7 Regulation
 - 8 Main unit
 - 9 Outdoor equipment
 - 10 Exhaust grill
 - 11 Blower motor
 - 12 Blower
 - 13 Evaporator
 - 14 Condenser
 - 15 Compressor
 - 16 Heater
 - 17 Supply
 - 18 Supply and modify

- 19 Modify
20 Supply and modification period
21 Back

81

保守点検基準					建物略称 本 部	
機器リスト	B01-01				機器リスト選択条件	
分類	空調	区分	冷凍機設備		空調	
名称	往復冷凍機	仕様	水冷式		冷凍機設備	

点検区分	点検分類	点検内容	点検周期	負荷 (単/年)	備考
▶ 本体	取付状況	据付状態の確認	月	1	12
▶ 本体	音振動状況	異常振動有無の確認	時	1	365
▶ 本体	音振動状況	異音有無の確認	時	1	365
▶ 本体	取付状況	附属装置取付状態の確認	6ヶ月	1	2
▶ 本体	取付状況	防振装置取付状態の確認	6ヶ月	1	2
▶ 本体	外観状況	腐食有無の確認	6ヶ月	2	4
▶ 本体	外観状況	変形有無の確認	6ヶ月	1	2
▶ 本体	外観状況	破損及び劣化状態の確認	6ヶ月	2	4
▶ 本体	音振動状況	異音・振動有無の確認	時	1	365
▶ 本体	油圧記録	主電源電圧値の確認	時	1	365
年間点検負荷合計				6.346.0	83

82 85

84

83

区分順 分類順 問題順 負荷換算値設定 年間点検負荷 印刷

◀ ▶ ⏪ ⏩ 🔍

Figure 8

- Key:
- 1 Maintenance and inspection criteria
 - 2 Building abbreviation
 - 3 Headquarters
 - 4 Equipment list
 - 5 Category
 - 6 Air conditioning
 - 7 Section
 - 8 Refrigeration installation
 - 9 Name
 - 10 [illegible] refrigerator
 - 11 Specifications
 - 12 Water cooled
 - 13 Equipment list selection requirements
 - 14 Air conditioning

- 15 Refrigeration installation
- 16 Inspected section
- 17 Inspection category
- 18 Inspection content
- 19 Inspection cycle
- 20 Load
- 21 (units/year)
- 22 Remarks
- 23 Main unit
- 24 Mounting conditions
- 25 Noise vibration conditions
- 26 Noise vibration conditions
- 27 Mounting conditions
- 28 Mounting conditions
- 29 Appearance
- 30 Appearance
- 31 Appearance
- 32 Noise and vibration conditions
- 33 Reading and recording
- 34 Confirm how installed
- 35 Confirm whether or not there is abnormal vibration
- 36 Confirm whether or not there is abnormal noise
- 37 Confirm how [illegible] apparatus is installed
- 38 Confirm how vibration damping apparatus is installed
- 39 Confirm whether or not there is corrosion
- 40 Confirm whether or not there is deformation
- 41 Confirm [illegible] and deterioration state
- 42 Confirm whether there is abnormal noise or vibration
- 43 Confirm principal power voltage value
- 44 Monthly
- 45 Hourly
- 46 [Every] 6 months
- 47 Total annual inspection load points
- 48 Section order
- 49 Category order
- 50 Cycle order
- 51 Set load conversion value
- 52 Annual inspection load
- 53 Print
- 54 To menu

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	戻る

Figure 9

- Key:
- 1 Inspection load conversion values
 - 2 Conversion value setting by inspection load cycle
 - 3 None
 - 4 As needed
 - 5 Hourly
 - 6 Daily
 - 7 Weekly
 - 8 Twice weekly
 - 9 Monthly
 - 10 Twice monthly
 - 11 [Every] 3 months
 - 12 [Every] 4 months
 - 13 [Every] 6 months
 - 14 1 year
 - 15 2 years
 - 16 Back

年間点検負荷累計											
101											
設備条件											
● 全て表示 ○ <input type="text"/>											
機器No	分類	設備区分	機器名称	機器仕様	台数	負荷合計	負荷小計	部度	時	日	週
A07-04	建築	外溝工事	車路	アスファルト舗装	1	111.00	111.00	0.00	0.00	0.00	0.00
A07-05	建築	外溝工事	車路	石張り	1	129.00	129.00	0.00	0.00	0.00	0.00
A07-08	建築	外溝工事	駐車場床	コンクリート舗装	3	75.00	25.00	0.00	0.00	0.00	0.00
A07-09	建築	外溝工事	駐車場床	石張り	6	240.00	40.00	0.00	0.00	0.00	0.00
A07-09	建築	外溝工事	駐車場床	石張り	1	40.00	40.00	0.00	0.00	0.00	0.00
A07-10	建築	外溝工事	樹	コンクリート造り	1	22.00	22.00	0.00	0.00	0.00	0.00
A07-11	建築	外溝工事	樹	鋼鉄造り	1	22.00	22.00	0.00	0.00	0.00	0.00
A07-11	建築	外溝工事	樹	鋼鉄造り	2	44.00	22.00	0.00	0.00	0.00	0.00
A07-13	建築	外溝工事	門扉	アルミ製	1	11.00	11.00	0.00	0.00	0.00	0.00
A07-14	建築	外溝工事	門扉	鋼製	7	77.00	11.00	0.00	0.00	0.00	0.00
A07-19	建築	外溝工事	排水	側溝	1	0.00	0.00	0.00	0.00	0.00	0.00
A08-01	建築	構造	柱	鉄筋コンクリート	1	20.00	20.00	0.00	0.00	0.00	0.00
A08-05	建築	構造	地中梁	鉄筋コンクリート	1	20.00	20.00	0.00	0.00	0.00	0.00
					2,207	85,894.8		111.00	272.16	2,021.70	3,374.80
102											
戻る											

Figure 10

- Key:
- 1 Total annual inspection load
 - 2 Installation requirements
 - 3 Display all
 - 4 Equipment list
 - 5 Category
 - 6 Inspected section
 - 7 Equipment name
 - 8 Equipment specifications
 - 9 Number of units
 - 10 Total load
 - 11 Load subtotal
 - 12 As needed
 - 13 Hourly
 - 14 Daily
 - 15 Weekly
 - 16 Building
 - 17 Gutter engineering
 - 18 Structure
 - 19 Structure

- 20 Asphalt [illegible]
- 21 Stone pitching
- 22 Concrete work
- 23 Masonry construction
- 24 Made of aluminum
- 25 Made of copper
- 26 Side gutter
- 27 Steel reinforced concrete
- 28 Back
- 29 Vehicle path
- 30 Parking lot floor
- 31 [illegible]
- 32 Door [illegible]
- 33 water mixing [transliteration]
- 34 Column
- 35 Underground construction

SRACS MAPデータ					
No	種別	設備	図面名称	元画像ファイル名	備考
1	平面図	建築	1階平面図	C:\SRACS\PRO\MAPDATA\B	
2	平面図	建築	2階平面図	C:\SRACS\PRO\MAPDATA\B	
3	平面図	建築	3階平面図	C:\SRACS\PRO\MAPDATA\B	
4	平面図	建築	4階平面図	C:\SRACS\PRO\MAPDATA\B	
5	平面図	建築	5階平面図	C:\SRACS\PRO\MAPDATA\B	
6	平面図	建築	6階平面図	C:\SRACS\PRO\MAPDATA\B	
7	平面図	建築	屋上・塔屋平面図	C:\SRACS\PRO\MAPDATA\B	
8	立面図	建築	東側立面図	C:\SRACS\PRO\MAPDATA\B	
9	立面図	建築	西側立面図	C:\SRACS\PRO\MAPDATA\B	
10	立面図	建築	南側立面図	C:\SRACS\PRO\MAPDATA\B	
11	立面図	建築	北側立面図	C:\SRACS\PRO\MAPDATA\B	
19	7/7図	衛生	給水管経路図	C:\SRACS\PRO\MAPDATA\B	CAD図面
20	7/7図	衛生	配水管経路図	C:\SRACS\PRO\MAPDATA\B	CAD図面
12	写真	空調	パナ-7室外機	C:\SRACS\PRO\MAPDATA\B	
13	写真	空調	パナ-7室内機	C:\SRACS\PRO\MAPDATA\B	
<div> <div>新製作成</div> <div>参照・編集</div> <div>削除</div> <div>戻 5</div> </div>					

Figure 11

- Key:
- A SRACS MAP data list
 - B Classification
 - C Installation
 - D Diagram name
 - E Original image file name
 - F Remarks
 - G CAD diagram

H	Back		
1	Plan view	Building	1 st floor plan view
2	Plan view	Building	2 nd floor plan view
3	Plan view	Building	3 rd floor plan view
4	Plan view	Building	4 th floor plan view
5	Plan view	Building	5 th floor plan view
6	Plan view	Building	6 th floor plan view
7	Plan view	Building	Rooftop, penthouse plan view
8	Elevation plan	Building	Eastside elevation plan
9	Elevation plan	Building	Westside elevation plane
10	Elevation plan	Building	Southside elevation plane
11	Elevation plan	Building	Northside elevation plane
19	Isometric view	Health	Water supply duct route diagram
20	Isometric view	Health	Sewage duct route diagram
12	Photograph	Air conditioning	Package room external equipment
13	Photograph	Air conditioning	Package room internal equipment
111	Create new		
112	Reference/edit		
113	Delete		

新規図面登録

タイプ	<input checked="" type="radio"/> 単独(DIT) <input type="radio"/> 組み合わせ(DBG)	
種別	平面図 ▼	
設備	建築 ▼	
図面名称	1階建築平面図	
ファイル名	C:\SW\CSF001\Apdata\Fil001YB1R002-1	参照
備考		
<input type="button" value="実行"/> <input type="button" value="キャンセル"/>		

Figure 12

Key:	1	Register new diagram
	2	Type
	3	Independent Stacked
	4	Category
	5	Plan view
	6	Installation
	7	Building
	8	Diagram name
	9	1 story building plan view
	10	File name

- | | |
|----|-----------|
| 11 | Reference |
| 12 | Remarks |
| 13 | Enter |
| 14 | Cancel |

[illegible]

Figure 13

- | | | |
|------|----|----------------------------|
| Key: | 1 | Management ledger |
| | 2 | Reference diagram |
| | 3 | Number of records selected |
| | 4 | Ledger ID |
| | 5 | Equipment list |
| | 6 | Category |
| | 7 | Name |
| | 8 | Air conditioning |
| | 9 | Package unit |
| | 10 | Section |
| | 11 | Specifications |
| | 12 | Refrigeration installation |

13 Separate
14 Building abbreviation
15 Headquarters
16 Equipment No.
17 Equipment name
18 Cooling capability
19 Heating capability
20 Indoor equipment type
21 [illegible]
22 Compressor capability
23 Number of units
24 Manufacturer
25 Manufacturer no.
26 Remarks
27 Hitachi Ltd.
28 [alphanumeric]
29 Heater
30 System name
31 Installation year month day
32 Acquisition price (1 unit)
33 Equipment list selection requirements
34 Air conditioning
35 Refrigeration installation
36 Repair history
37 Management diagram
38 Search
39 List
40 Print
41 New
42 Delete
43 To inspection criteria
44 To menu
45 [illegible portions]
131 Cancel

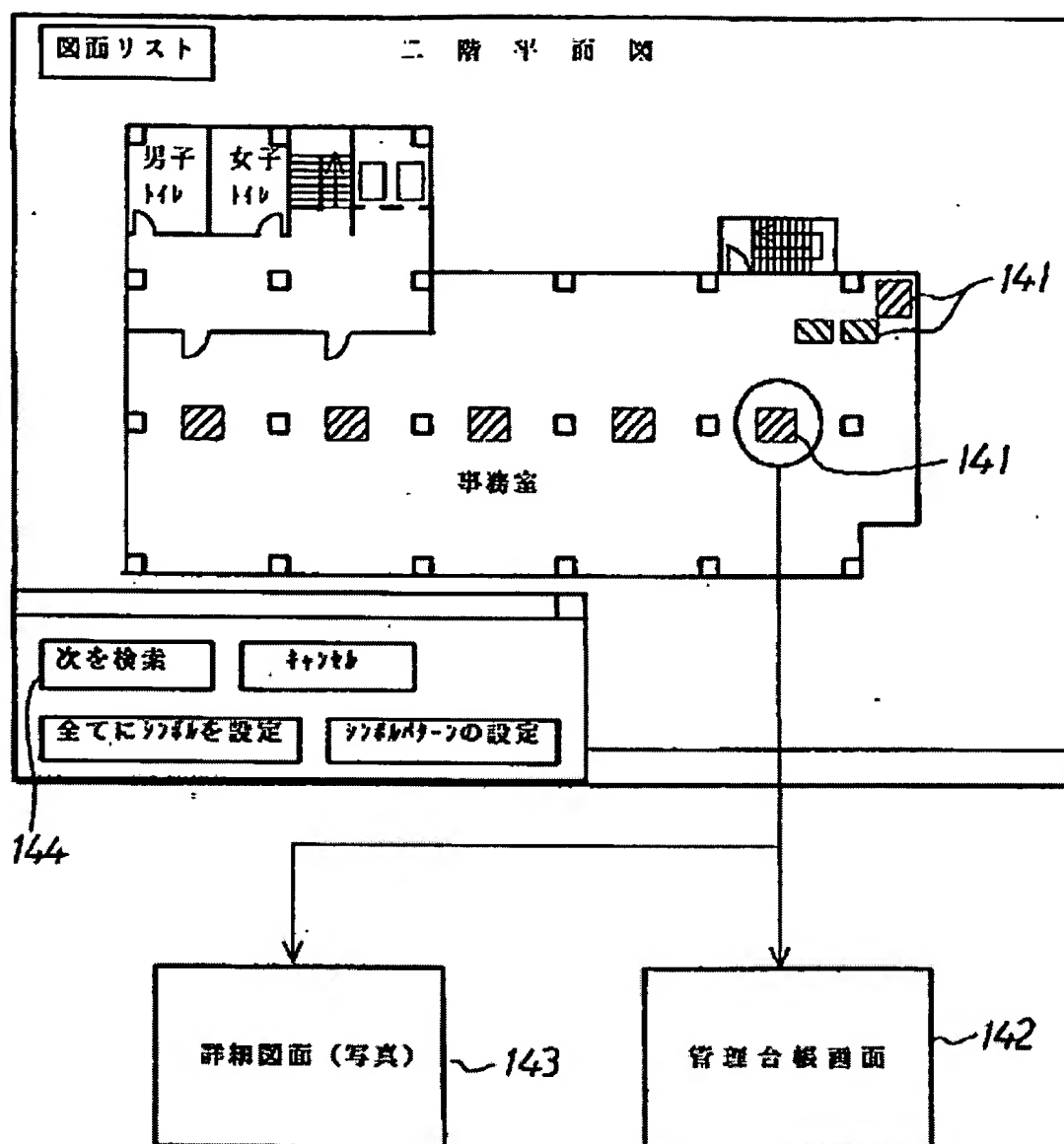


Figure 14

- Key:
- 1 Diagram list
 - 2 2nd floor plan view
 - 3 Men's restroom
 - 4 Women's restroom
 - 5 Office
 - 6 Search for next
 - 7 Cancel
 - 8 Set symbols for all
 - 9 Set symbol pattern
 - 142 Management ledger screen
 - 143 Detailed diagram (photograph)

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